No. 7800018

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Asgrow Seed Company

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF seventeen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'A5618'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington this 11th day of May in the year of our Lord one thousand nine hundred and seventy-eight

Attest:

Acting
Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Secretary of Agriculture

FORM GR-470
(1-76)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
PLANT VARIETY PROTECTION OFFICE
NATIONAL AGRICULTURAL LIBRARY
BELTSVILLE, MARYLAND 20705

FORM APPROVED
OMB NO. 40-R3712

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

1a. TEMPORARY DESIGNATION OF VARIETY	1b. VARIETY NAME	FOR OFFICIAL USE ONLY	
XP 5618	A5618	PV NUMBER 7800018	
2. KIND NAME	3. GENUS AND SPECIES NAME	FILING DATE 1-6-78	TIME 2:30 A.M. (P.M.)
Soybean	Glycine max	FEE RECEIVED $250.00 $250.00 $250.00	DATE 1-6-78 1-6-78 3-20-78
4. FAMILY NAME (BOTANICAL)	5. DATE OF DETERMINATION		
Leguminosae	October 1975		

6. NAME OF APPLICANT(S)	7. ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*)	8. TELEPHONE AREA CODE AND NUMBER
Asgrow Seed Company	Kalamazoo, Michigan 49001	(616) 385-6605

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (*Corporation, partnership, association, etc.*)	10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION	11. DATE OF INCORPORATION
Corporation	Delaware	March 22, 1968

12. Name and mailing address of applicant representative(s), if any, to serve in this application and receive all papers:

John A. Batcha
Asgrow Seed Company
Unit 9630-190-1
7000 Portage Road
Kalamazoo, Michigan 49001

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- [X] 13A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- [X] 13B. Exhibit B, Novelty Statement.
- [X] 13C. Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
- [ ] 13D. Exhibit D, Additional Description of the Variety.

14A. Does the applicant(s) specify that seed of this variety be sold by variety name only as a class of certified seed? *(See Section 83(a). (If "Yes," answer 14B and 14C below.)* [ ] YES [XX] NO

14B. Does the applicant(s) specify that this variety be limited as to number of generations? [ ] YES [ ] NO

14C. If "Yes," to 14B, how many generations of production beyond breeder seed? [ ] FOUNDATION [ ] REGISTERED [ ] CERTIFIED

15. Does the applicant(s) agree to the publication of his/her (their) name(s) and address in the Official Journal? [XX] YES [ ] NO

16. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be deposited upon request before issuance of a certificate and will be replenished periodically in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

12-12-77
(DATE)

John a. Batcha
(SIGNATURE OF APPLICANT)
John A. Batcha

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(DATE)

(SIGNATURE OF APPLICANT)
December 12, 1977

INSTRUCTIONS

GENERAL: Send an original copy of the application, exhibits and $250.00 fee to U.S. Dept. of Agriculture, Agricultural Marketing Service, Grain Division, National Agricultural Library, Beltsville, Maryland 20705. (See Section 180.175 of the regulations and rules of practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

5 Give the date the applicant determined that he had a new variety based on (1) the definition in Section 41(a) of the Act and (2) the date a decision was made to increase the seed.

13a Give (1), the genealogy, including public and commerical varieties, lines, or clones used, and the breeding method. (2), the details of subsequent stages of selection and multiplication. (3), the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4), evidence of stability.

13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties; (1) identify these varieties and state all differences objectively; (2) Attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.

13c Fill in the Exhibit C, Objective Description form for all characteristics, for which you have adequate data.

13d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe; such as; plant habit, plant color, disease resistance, etc.

14A If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled or published or the certificate has been issued. However, if the applicant specifies "NO", he may change his choice. (See Section 180.15 of the Regulations and Rules of Practice.)

Asgrow Seed Company
Soybean ~~XP~~A5618

7800018

EXHIBIT A

Origin and Breeding History of the Variety

1972	Original cross made at Queen Anne, Md. Parents: (Williams x V69-289)F_2 plant x YORK
1972-73	11 F_1 plants were grown in Puerto Rico under lighted conditions.
1973 (Winter-Spring)	F_2 Bulk Populations grown in Puerto Rico.
1973 (Summer)	F_3 Bulk Populations grown in Queen Anne, Md. F_4 single plant selections of Maturity Group V were made.
1973-74 (Winter)	151 F_4 plant rows were grown at Delray Beach, Fla. 37 of these plant rows appeared homozygous and were bulked. Row Q72-139-69 was bulk harvested and produced 2 pounds of seed.
1974	Q72-139-69 was entered in Preliminary Yield Tests in Queen Anne, Md., and Caruthersville, Mo. Q72-139-69 was selected for its uniformity, high yield and excellent seed quality. Two hundred plants were selected and threshed individually.
1975	Q72-139-69 was designated as M75-5318 and entered in Advance Yield Tests in Missouri and Maryland. Also 200 plant rows were grown in Missouri, two of these rows were discarded as off-types and the remaining rows bulked as Breeder seed. It was at this time M75-5318 was designated as XP5618 and declared a pure-line variety, based on its performance and uniformity of plant and seed type.
1976	XP5618 was evaluated at 4 locations in Maryland and Missouri in Advance Yield Tests. 510 pounds of Basic seed was produced at Caruthersville, Mo. Less than 1% off-type plants were removed from Basic seed field.
1977	XP5618 is being grown in Advance Yield Tests in Maryland, Missouri, Virginia, Kansas and Texas. XP5618 was also entered in State Yield Tests in Maryland, Virginia and Missouri.
	Foundation seed fields were established in Virginia and Missouri. Surveys of these Foundation seed fields show less than 1% off-type plants.

December 12, 1977

Subject: PVP Application 7800018
~~XP~~5618
A

13a(3) - Addition to Exhibit A (attached)

1975 - 200 plant rows of ~~XP~~A5618 (Q72-139-69) were evaluated at Caruthersville, Missouri. Two out of 200 plant rows were discarded due to hilum color variants - brown and imperfect black (one of each) instead of buff of the seed of the remaining 198 rows.

1976 - Basic Seed Production - Caruthersville, Missouri
2 plants out of 1,000 sampled at random produced a dark buff or brown hilum color. Whether the different coloration of the hilum was due to genetic or environmental factors was not determined.

1977 - Foundation Seed Production
Two fields of Foundation Seed were grown in Virginia and Missouri. Field inspections at flowering and maturity revealed no off-types present. Seed samples (10,000 seed) showed no genetic off-types.

Asgrow Seed Company
Soybean XP5618

7800018

EXHIBIT B

Novelty Statement

To our knowledge, the soybean variety that most closely resembles XP5618 is York. The characteristic that differentiates XP5618 from York includes but is not restricted to seed peroxidase enzyme concentration. XP5618 has a low peroxidase seed level whereas York has a high peroxidase level according to University of Illinois laboratory tests. A copy of letter from Dr. Theodore Hymowitz dated September 28, 1977 describing his test results on XP516 is enclosed as Exhibit 1.

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December 12, 1977

EXHIBIT B Fingerprinting of Cultivars 7800018

Cultivar	MG	Hila Color	Ti	Sp_1	Peroxidase
Altona	00	Black	Ti^1	B	H
Amsoy 71	II	Yellow	Ti^1	A	H
Aoda	IV	Buff	Ti^2	B	H
Beeson	II	Imperfect Black	Ti^1	A	L
Bonus	IV	Imperfect Black	Ti^1	A	L
Bragg	VII	Black	Ti^1	B	L
Calland	III	Black	Ti^1	B	L
Chippewa	I	Black	Ti^1	B	L
Clark 63	IV	Black	Ti^1	B	L
Clay	0	Yellow	Ti^1	B	L+H
Cobb	VIII	Buff	Ti^1	B	H
Columbus	IV	Black	Ti^1	B	L
Corsoy	II	Yellow	Ti^1	B	H
Cutler 71	IV	Black	Ti^1	B	L+H
Dare	V	Light Brown	Ti^1	B	L
Davis	VI	Buff	Ti^1	B	L
Disoy	I	Yellow	Ti^1	B	L
Dyer	V	Black	Ti^1	B	L
Essex	V	Buff	Ti^1	B	L
Evans	0	Yellow	Ti^1	A	H
Flambeau	00	Black	Ti^1	B	H
Forrest	V	Black	Ti^1	B	H
Hampton	VIII	Light Brown	Ti^1	B	L
Hardee	VIII	Buff	Ti^1	B	L
Hark	I	Yellow	Ti^1	B	H
Harosoy 63	II	Yellow	Ti^1	A	H
Hawkeye 63	II	Imperfect Black	Ti^1	B	L
Hill	V	Brown	Ti^1	B	L
Hodgson	I	Buff	Ti^1	B	H
Hood	VI	Buff	Ti^1	B	L
Hutton	VIII	Black	Ti^1	B	L
Kanrich	III	Yellow	Ti^1	B	L
Kent	IV	Black	Ti^1	B	H
Lee 74	VI	Black	Ti^1	B	L
Mack	V	Black	Ti^1	B	L
Magna	II	Yellow	Ti^1	A	H
Miller 67	III	Buff	Ti^2	B	H
Norman	00	Yellow	Ti^1	A	H
Oksoy	IV	Buff	Ti^1	B	L
Pickett 71	VI	Imperfect Black	Ti^1	B	L
Portage	00	Yellow	Ti^1	A	H
Prize	II	Yellow	Ti^1	B	L
Protana	II	Imperfect Black	Ti^1	B	L
Provar	II	Brown	Ti^1	B	H
Semmes	VII	Imperfect Black	Ti^1	B	L
Steele	I	Yellow	Ti^1	A	L
Swift	0	Black	Ti^1	B	H
Tracy	VI	Black	Ti^1	B	L
Traverse	0	Yellow	Ti^1	B	H
Wayne	III	Black	Ti^1	B	L
Wells	II	Imperfect Black	Ti^1	A	L
Williams	III	Light Black	Ti^1	B	H
Woodworth	III	Black	Ti^1	B	L
Wye	IV	Black	Ti^1	B	L
→ York	V	Buff	Ti^1	B	H

MG = Maturity Group. Hila Color = color of seed hilum.
Ti = Trypsin Inhibitor protein type.
Sp_1 = A--Rf 0.36; B--Rf 0.42 10% polyacrylamide gel anodic system (Rf = relative mobility to dye front).
Peroxidase = Peroxidase activity: H--high activity; L--low activity.

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COLLEGE OF AGRICULTURE · DEPARTMENT OF AGRONOMY · URBANA, ILLINOIS 61801

EXHIBIT B

7800018

September 28, 1977

Dr. John Schillinger
Asgrow Seed Company
634 E. Lincoln Way
Route 2
Ames, IA 50010

Dear John:

Last July you sent me a number of seed packets to analyze for possible use in fingerprinting soybean lines. We just completed the tests and the results are as follows.

Strain	Peroxidase	Sp_1	Ti
M75-5375	High	b	1
M75-5350	High	b	1
XP-5618	Low	b	1
XP-5312	High + Low	b	1

Note: Peroxidase = $\underline{Ep}$ (high), $\underline{ep}$ (low), high + low (mixture)
$Sp_1 = \underline{Sp}_1^a$ or $\underline{Sp}_1^b$
$Ti = \underline{Ti}^1$, $\underline{Ti}^2$, $\underline{Ti}^3$ or $\underline{ti}$

The costs are as follows: (a) for each peroxidase test $12.50 and b) for each Sp_1 and Ti test $25.00. Therefore, please send a check in the amount of $150.00 (4 x $37.50) to Mrs. Inez Curtis, Department of Agronomy, University of Illinois, Urbana, Illinois 61801 and made payable to the University of Illinois. Please indicate that the check should be deposited in account number 22-15-15-720-80.

In addition, I have a bunch of seed packets that I will analyze for oil and protein content. Sorry about the delay. However, we should be back in business in about 15 days. The retrofitted Dickey-john instrument was returned to us on Monday and now we are busy running corn and soybean standards through the machine. The cost of the oil and protein samples remains $2.50 per sample.

Sincerely yours,

Theodore Hymowitz
Professor, Plant Genetics

TH:slm
cc: Mrs. Inez Curtis

FORM GR-470-2
(6-15-72)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY

SOYBEAN *(GLYCINE MAX)*

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)

ASGROW SEED COMPANY

ADDRESS *(Street and No., or R.F.D. No.; City, State, and ZIP Code)*

Kalamazoo, Michigan 49001

FOR OFFICIAL USE ONLY

PVPO NUMBER 7800018

VARIETY NAME OR TEMPORARY DESIGNATION

A5618

Place the appropriate number that describes the varietal character of this variety in the boxes below.

1. SEED SHAPE:

[1] 1 = SPHERICAL 2 = SPHERICAL FLATTENED 3 = ELONGATE 4 = OTHER *(Specify)*

2. SEED COAT COLOR:

[1] 1 = YELLOW 2 = GREEN 3 = BROWN 4 = BLACK 5 = OTHER *(Specify)*

SHADE: [2] 1 = LIGHT 2 = MEDIUM 3 = DARK

3. SEED COAT LUSTER:

[1] 1 = DULL 2 = SHINY

4. SEED SIZE

[1 5] GRAMS PER 100 SEEDS

5. HILUM COLOR:

[1] 1 = BUFF 2 = YELLOW 3 = BROWN 4 = GRAY 5 = IMPERFECT BLACK 6 = BLACK 7 = OTHER *(Specify)*

SHADE: [1] 1 = LIGHT 2 = MEDIUM 3 = DARK

6. COTYLEDON COLOR: Very light bronze yellow color code 163D royal horticultural society color chart

[1] 1 = YELLOW 2 = GREEN

7. LEAFLET SIZE *(See Reverse)*:

[3] 1 = SMALL 2 = MEDIUM 3 = LARGE

8. LEAFLET SHAPE:

[1] 1 = OVATE 2 = OBLONG 3 = LANCEOLATE 4 = ELLIPTICAL 5 = OTHER *(Specify)*

9. LEAF COLOR *(See reverse)*:

[2] 1 = LIGHT GREEN 2 = MEDIUM GREEN 3 = DARK GREEN

10. FLOWER COLOR:

[2] 1 = WHITE 2 = PURPLE 3 = OTHER *(Specify)*

11. POD COLOR:

[1] 1 = TAN 2 = BROWN 3 = BLACK

12. POD SET:

[2] 1 = SCATTERED 2 = CONCENTRATED

13. PLANT PUBESCENCE COLOR:

[1] 1 = GRAY 2 = BROWN 3 = OTHER *(Specify)*

SHADE: [1] 1 = LIGHT 2 = MEDIUM 3 = DARK

14. PLANT TYPES *(See Reverse)*:

[2] 1 = SLENDER 2 = BUSHY 3 = INTERMEDIATE

15. PLANT HABIT:

[1] 1 = DETERMINATE 2 = INDETERMINATE 3 = OTHER *(Specify)*

16. HYPOCOTYL COLOR:

[2] 1 = GREEN 2 = PURPLE

17. SEED PROTEIN:

[2] 1 = A 2 = B

18. NUMBER OF DAYS TO FLOWERING *(Place a zero in first box (e.g. [0 9]) when days are 9 or less.)*

Planted 5/1- [8 3] in Mo.

19. MATURITY GROUP: [7]

1 = 00 2 = 0 3 = I 4 = II 5 = III 6 = IV 7 = V 8 = VI 9 = VII 10 = VIII

20. SIZE OF 10 DAY OLD SEEDLING GROWN UNDER CONSTANT LIGHT *(Growth Chamber)* **AT 25° C.** *(Place a zero in first box (e.g. [0 2]) when size is 9 mm. or less.)*

[1 0 6] MM. LENGTH OF SEEDLING

[1 8] MM. LENGTH OF COTYLEDON

[1 2] MM. WIDTH OF COTYLEDON

21. DISEASE: *(Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)*

[2] BACTERIAL PUSTULE	[1] SOYBEAN CYST	[0] DOWNY MILDEW	[0] PURPLE STAIN	[0] POD AND STEM BLIGHT	[0] ROOT KNOT	
[0] FROGEYE	[2] STEM CANKER	[1] PHYTO-PHTHORA	[0] BROWN STEM ROT	[0] TARGET SPOT	[0] BROWN SPOT	
[0] BUD BLIGHT	[0] WILDFIRE	[ ] RHIZOCTONIA ROT	[2] OTHER *(Specify)* Powdery Mildew			

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FORM GR-470-2 (REVERSE)

7800018

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant shape	York	Petiole angle	York
Leaf shape	"	Seed size	"
Leaf color	"	Seed shape	"
Leaf surface	"	Seedling pigmentation	"

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY:

VARIETY	NO. OF DAYS TO MATURITY	LODGING SCORE	PLANT HEIGHT inches	LEAF SIZE		CONTENT		AVERAGE NO. OF PODS PER PLANT	IODINE NO.
				Width	Length	Protein	Oil		
Submitted XP5618	166	2.8	41	17	11		%	82	
Name of similar variety York	165	2.8	39	16	12			80	

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for completing this form:

1. Scott, Walter O. and Samuel R. Aldrich, 1970, Modern Soybean Production, The Farmer Quarterly.
2. Norman, A. G., 1963, The Soybean: Genetics, Breeding, Physiology, Nutrition, Management.
3. McKie, J. W., and K. L. Anderson, 1970, The Soybean Book.

LEAF COLOR: Nickerson's or any recognized color fan may be used to determine the leaf color of the described variety. The following Soybean varieties may be used as a guide to identify the colors listed on the form.

COLOR	VARIETY
Light Green	"Ada"
Medium Green	"Wilkin"
Dark Green	"Swift"

LEAF SIZE: The following varieties may be used as a guide to identify the relative size leaves.

SIZE	VARIETY
Small	"Amsoy"
Medium	"Bonus"
Large	"Anoka"

PLANT TYPE: The following varieties may be used as a guide to identify the plant type.

TYPE	VARIETY
Slender	"Vansoy"
Intermediate	"Wirth"
Bushy	"Adelphia"